

AMENDED CLAIMS

[received by the International Bureau of Intellectual Property
original claims 1 and 16 amended; original claim 15 and 20-29 cancelled;
remaining claims unchanged (5 pages)]

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CLAIMS

1. (Amended) A pulse wave measuring apparatus comprising:

a substrate (1) having pressure-sensing means (3) on a main surface; and

5 a protection member (12) having an accommodation space accommodating said substrate (1), the pulse wave measuring apparatus serving to measure a pulse wave by pressing said substrate (1) against a living body; wherein

said protection member (12) is formed of a conductive material, and

10 a wall surface (20a) of said protection member (12) forming said accommodation space is arranged such that an air chamber (20) is interposed between said wall surface and an end surface of said substrate (1).

15 2. The pulse wave measuring apparatus according to claim 1, wherein said air chamber (20) is provided around an entire perimeter of said substrate (1).

3. The pulse wave measuring apparatus according to claim 1, wherein said air chamber (20) is open to atmosphere.

20 4. The pulse wave measuring apparatus according to claim 1, further comprising a circuit board (26) processing a signal, and a flexible line (18) transmitting a signal output from said pressure-sensing means (3) to said circuit board (26), wherein
said flexible line (18) includes a fixed portion (18a) fixed to said protection member (12), a connection portion (18b) connected to said substrate (1), and a loosened portion (18c) located between said fixed portion (18a) and said connection portion
25 (18b).

5. The pulse wave measuring apparatus according to claim 4, wherein

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said loosened portion (18c) is located inside said air chamber (20).

6. The pulse wave measuring apparatus according to claim 1, further comprising a circuit board (26) processing a signal, and a flexible line (18) transmitting a signal output from said pressure-sensing means (3) to said circuit board (26), wherein
5 said flexible line (18) includes a fixed portion (18a) fixed to said protection member (12) and a connection portion (18b) connected to said substrate (1), and a portion (18d) having rigidity different from that of another portion of said flexible line (18) is located between said fixed portion (18a) and said connection portion
10 (18c) of said flexible line (18).

7. The pulse wave measuring apparatus according to claim 1, further comprising
a protection film (16) covering said main surface of said substrate (1) and said
15 air chamber (20), and attachment means (42) for fastening a peripheral portion of said protection film (16) to an outer circumferential wall of said protection member (12) for attachment.

8. The pulse wave measuring apparatus according to claim 7, wherein
20 said protection member (12) has a substantially circular outer shape when viewed from a direction orthogonal to said main surface of said substrate (1), and said attachment means (42) is an O ring.

9. The pulse wave measuring apparatus according to claim 8, wherein
25 said outer circumferential wall of said protection member (12) has a concave fitting portion (47) fitting to an inner portion of said O ring (42) on an entire circumference, and

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an outer portion of said O ring (42) projects from said outer circumferential wall of said protection member (12).

10. The pulse wave measuring apparatus according to claim 7, wherein
5 said protection film (16) and said attachment means (42) are integrally formed.

11. The pulse wave measuring apparatus according to claim 7, wherein
said protection film (16) has a collar portion (16a) in said peripheral portion.

10 12. The pulse wave measuring apparatus according to claim 1, wherein
said protection member (12) includes an inner frame body (44) containing said
accommodation space and an outer frame body (46) fitted to said inner frame body (44)
so as to enclose an outer wall of said inner frame body (44),
said outer frame body (46) has a protection film portion (46d) covering said
15 main surface of said substrate (1) and said air chamber (20), and
an outer circumferential wall of said outer frame body (46) has a projected
portion (46c) on its entire circumference.

13. The pulse wave measuring apparatus according to claim 1, further
20 comprising a circuit board (26) processing a signal, and a flexible line (18) transmitting a
signal output from said pressure-sensing means (3) to said circuit board (26), wherein
said protection member (12) includes an inner frame body (44) containing said
accommodation space and an outer frame body (46) fitted to said inner frame body (44)
so as to enclose an outer wall of said inner frame body (44), and
25 said flexible line (18) is inserted between said inner frame body (44) and said
outer frame body (46).

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14. The pulse wave measuring apparatus according to claim 13, wherein
said outer frame body (46) has an overhanging portion (46a) provided so as to
project from an inner surface of said outer frame body (46) and facing, with a distance, a
perimeter of an accommodation space forming surface of said inner frame body (44)
5 where said accommodation space is formed, and
said flexible line (18) inserted between said inner frame body (44) and said outer
frame body (46) is protected by said overhanging portion (46a).

15. (Cancelled)

10 16. (Amended) The pulse wave measuring apparatus according to claim 1,
wherein
said protection member (12) is electrically connected to a ground potential.

15 17. The pulse wave measuring apparatus according to claim 16, further
comprising a circuit board (26) processing a signal, and a flexible line (18) transmitting a
signal output from said pressure-sensing means (3) to said circuit board (26), wherein
said protection member (12) is electrically connected to the ground potential by
means of said flexible line (18).

20 18. The pulse wave measuring apparatus according to claim 1, wherein
said protection member (12) is formed with a metal material or a ceramic
material.

25 19. The pulse wave measuring apparatus according to claim 1, wherein
said protection member (12) has a plurality of small irregularities on its surface.

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20. (Cancelled)

21. (Cancelled)

22. (Cancelled)

23. (Cancelled)

5 24. (Cancelled)

25. (Cancelled)

26. (Cancelled)

27. (Cancelled)

28. (Cancelled)

10 29. (Cancelled)